

## **REMARKS**

Upon entry of this amendment, claims 24-35 are all the claims pending in the application.

Claims 1-23 are canceled by this amendment. Claims 24-35 are added as new claims. No new matter has been added.

Applicant notes that a number of editorial amendments have been made to the specification and abstract for grammatical and general readability purposes. Due to the number of changes made, a substitute specification and abstract are submitted herewith. No new matter has been added. Also enclosed is a marked-up copy of the original specification and abstract showing the changes incorporated into the substitute specification and abstract.

### **I. Claim Objections and Rejections**

The Examiner has objected to claims 16-23 for the reasons set forth on page 2 of the Office Action. To facilitate the Examiner's reconsideration of the application, original claims 1-23 have been replaced with new claims 24-35. Applicant submits that each of the new claims has been drafted to address the Examiner's objections.

### **II. Claim Rejections**

The Examiner has rejected claims 1, 16 and 20 under 35 U.S.C. § 102(b) as being anticipated by Jones et al. (U.S. 6,328,640), and has rejected claims 2-15, 17-19 and 21-23 under 35 U.S.C. § 103(a) as being unpatentable over Jones et al. in view of Kobayashi et al. (U.S. 6,488,573).

Claims 1-23 have been cancelled and are replaced with new claims 24-35 in order to

further distinguish the present invention from the references applied by the Examiner. Therefore, the above-mentioned rejections are submitted to be inapplicable to the new claims for at least the following reasons.

Claim 24 recites the feature of at least two first rollers operable to rotate which are arranged above the cylindrical polishing tools to limit an upper position of the work piece and to make the work piece rotate along its axis and to make the work piece move such that a center of the work piece crosses a contact area of the cylindrical polishing tools. Applicant submits that the cited prior art fails to disclose or suggest at least this feature of claim 24.

Jones discloses an apparatus for preparing a semiconductor wafer. The apparatus includes a pair of upper polishing pads 8, 8' and a pair of lower polishing pads 12, 12' that can selectively engage a wafer W (see Fig. 1 and col. 4, lines 22-26). By pivoting drive casings 16, 16' about pivot points 18, 18', either the upper pair of polishing pads 8, 8' or the lower pair of polishing pads 12, 12' are able to come into contact with the wafer W (see col. 5, lines 28-36).

The wafer W is supported and rotated by a wafer drive assembly (see col. 5, lines 38-40). As shown in Figs. 1 and 11a, wafer drive rollers 6, 6' mounted to the end of roller arms 20, 20' support the wafer W and are able to engage the perimeter edge of the wafer (see col. 5, lines 43-58). An upward motion of the roller arms 20, 20' causes the drive rollers 6, 6' to move upward and close together, thus causing the wafer W to move upward (see col. 6, lines 18-23). Conversely, a downward pivoting motion of the roller arms 20, 20' causes a lowering of the wafer W (see col. 6, lines 23-25).

As shown in Figs. 1 and 11a, a wafer top alignment roller 24 is provided on an alignment arm 25 (see col. 5, lines 64-65). The alignment roller 24 engages a perimeter edge of the wafer

and serves to maintain alignment of the wafer W and to provide lateral support when the polishing pads 8, 8', 12 and 12' are disengaged from the wafer W (see col. 5, line 67 - col. 6, line 4).

Thus, in Jones, by activating drive rollers 6, 6' via roller arms 20, 20', a wafer W can be transported to and from the wafer preparation apparatus, whereby the polishing pads 8, 8', 12 and 12' are able to pivot so as to polish the wafer W (see Figs. 1 and 11a, and col. 18, lines 29-43).

Accordingly, while Jones discloses a pair of cylindrical polishing tools for polishing a wafer and a roller arranged above the polishing tools to limit an upper position of the wafer, Jones does not disclose at least two first rollers operable to rotate which are arranged above a pair of cylindrical polishing tools to limit an upper position of a work piece and to make the work piece rotate along its axis and to make the work piece move such that a center of the work piece crosses a contact area of the cylindrical polishing tools, as recited in claim 24.

In addition, Applicant notes that claim 24 also recites that the pair of cylindrical polishing tools are rotated so as to pull the work piece toward the first rollers for rotation. Applicant respectfully submits that Jones also fails to disclose or suggest this feature of claim 24.

As discussed above, Jones discloses polishing pads 8, 8', 12 and 12' which pivot and rotate so as to polish the wafer W, and a single roller 24 which is disposed above the wafer W so as to maintain proper alignment of the wafer when the polishing pads are disengaged (see col. 5, line 67 - col. 6, line 4).

Thus, while Jones discloses a plurality of polishing pads and a roller disposed above the polishing pads, Applicant respectfully submits that Jones does not disclose or suggest that a pair of cylindrical polishing tools are rotated so as to pull a work piece toward at least two first

rollers, as recited in claim 24.

Further, Applicant respectfully submits that Kobayashi fails to cure the above noted deficiencies of Jones. Regarding Kobayashi, Applicant notes that this reference was relied on by the Examiner for the teaching of a circular transport mechanisms for transferring a wafer (see Office Action at page 4).

In view of the foregoing, Applicant respectfully submits that the cited prior art fails to disclose, suggest, or otherwise render obvious all of the features of claim 24. Accordingly, Applicant submits that claim 24 is patentable over the cited prior art, an indication of which is respectfully requested.

If the Examiner rejects claim 24 on the basis of prior art, Applicant kindly requests that the Examiner particularly identify the structure in the respective prior art references that is being relied upon as corresponding to the features recited in claim 24.

Regarding claims 25-35, Applicant notes that these claims depend from claim 24 and are therefore considered patentable at least by virtue of their dependency.

### **III. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited.

If any points remain in issue which the Examiner feels may best be resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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